

Exhibit 21

T-Mobile Smartphones - See product list at end of chart for models	
Infringement of the '261 patent	
Claim 38	Evidence
38. A method, comprising:	<p>The T-Mobile Smartphone performs a method.</p> <p>For example, the T-Mobile Smartphone has an image capturing subsystem, which includes a CMOS image sensor for capturing image data, and an image processing subsystem, which includes a processor for processing the image data. The image processing creates a panoramic image from two or more of the images when the T-Mobile Smartphone is operated in a panoramic image-capturing mode. [1] – [6]</p>
acquiring a first image;	<p>The T-Mobile Smartphone acquires a first image.</p> <p>For example, when the T-Mobile Smartphone is operated in a panoramic image-capturing mode, the image capturing subsystem acquires a first image. [7] [8]</p>
acquiring a second image;	<p>The T-Mobile Smartphone acquires a second image.</p> <p>For example, when the T-Mobile Smartphone is operated in a panoramic image-capturing mode, the image capturing subsystem acquires a second image. [7] [8]</p>
converting at least a portion of the first and second images from a rectilinear-based view to a cylindrical-based view based at least in part on a conversion from rectilinear to cylindrical coordinates;	<p>The T-Mobile Smartphone converts at least a portion of the first and second images from a rectilinear-based view to a cylindrical-based view based at least in part on a conversion from rectilinear to cylindrical coordinates;</p> <p>For example, the processor creates a panoramic image from two or more images. The images are the result of rotationally panning the T-Mobile Smartphone in a given direction about an axis and along a substantially straight line while capturing adjacent images. Each image is composed of pixels arranged in a grid, thereby forming a rectilinear-based view. Each image also represents a view at a respective angle about the axis of rotation, the view thereby corresponding to a respective orientation. In order to combine the images to form a panoramic image, the processor converts at least a portion of two adjacent images (the first and second acquired images) into a cylindrical-based view. The processor does this, at least in part, by performing a conversion of the pixel coordinates</p>

	of the portions of the two adjacent images from rectilinear to cylindrical coordinates. [7] – [10]
compositing the at least a portion of the first and second images;	<p>The T-Mobile Smartphone performs compositing the at least a portion of the first and second images.</p> <p>For example, the processor composites the portion of the adjacent images (first and second images) that have undergone conversion from rectilinear to cylindrical coordinates. [7] – [10]</p>
converting a perspective of at least a strip portion of the first image from a first orientation to a second orientation, wherein said at least a portion of the first image comprises said at least said strip portion; and	<p>The T-Mobile Smartphone converts a perspective of at least a strip portion of the first image from a first orientation to a second orientation, wherein said at least a portion of the first image comprises said at least said strip portion.</p> <p>For example, in order to create a panoramic image from two images that each represents a respective orientation, the processor performs a perspective correction operation on at least a strip portion of the first image. The strip portion is the portion of the first image that has undergone a conversion from rectilinear to cylindrical coordinates. Typically, the strip portion is in a section of the first image that overlaps the second image. [7] – [10]</p>
displaying the at least a portion of the first and second images.	<p>The T-Mobile Smartphone displays the at least a portion of the first and second images.</p> <p>For example, the T-Mobile Smartphone displays the portion of the first and second images that has undergone the conversion from rectilinear to cylindrical coordinates, thereby displaying the resultant panoramic image e.g. on the display of the T-Mobile Smartphone. [7] – [10]</p>

Product List:

REVVLRY TD-LTE US 32GB XT1952-T
 REVVLRY+ TD-LTE US XT1965-T
 Revvl 2 Plus LTE US 6062Z
 Revvl 2 LTE US 5052W
 REVVL Plus LTE US
 REVVL LTE US

References:

[1] REVVLRY TD-LTE US 32GB XT1952-T

http://phonedb.net/index.php?m=device&id=15348&c=t-mobile_revvlry_td-lte_us_32gb_xt1952-t_motorola_channel

[2] REVVLRY+ TD-LTE US XT1965-T

http://phonedb.net/index.php?m=device&id=15345&c=t-mobile_revvlryplus_td-lte_us_xt1965-t_motorola_lake

[3] Revvl 2 Plus LTE US 6062Z

http://phonedb.net/index.php?m=device&id=14402&c=t-mobile_revvl_2_plus_lte_us_6062z_tcl_6062

[4] Revvl 2 LTE US 5052W

http://phonedb.net/index.php?m=device&id=14401&c=t-mobile_revvl_2_lte_us_5052w_tcl_5052

[5] REVVL Plus LTE US

http://phonedb.net/index.php?m=device&id=12805&c=t-mobile_revvl_plus_lte_us&d=detailed_specs

[6] REVVL LTE US

http://phonedb.net/index.php?m=device&id=11937&c=t-mobile_revvl_lte_us&d=detailed_specs

[7] Tips for taking good panorama shots on Android

<https://www.androidcentral.com/tips-taking-good-panorama-shots-android>

[8] Image Stitching

https://en.wikipedia.org/wiki/Image_stitching

[9] Panoramic Photography Tutorial

<https://photographylife.com/landscapes/panoramic-photography-howto>

[10] Panoramic Image Projections

<https://www.cambridgeincolour.com/tutorials/image-projections.htm>